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MANISTEE, MI
SOUTH BEND, IN
FORT WAYNE, IN

ADDENDUM NO. 2

Date:	January 7, 2009
To:	All Bidders and Plan Holders
From:	Abonmarche Consultants, Inc.
Owner:	Benton Harbor Area Schools
Project:	Benton Harbor High School Condensing Unit
Project No.	M8-0842

SCOPE OF WORK:

The following items are changes to and/or clarifications of the drawings and specifications, and shall be included in the Bid Proposal. All of these items will be part of the Contract Documents. The Bidder will acknowledge receipt of this Addendum in the appropriate space provided on the Bid Form. Failure to do so may result in disqualification of the Bid.

SPECIFICATIONS:

1. Refer to Section 004100 – Bid Form: Revise the following items – Bid Due Date from December 23, 2008 to January 14, 2009, Offer Description " Benton Harbor High School 50-ton Condenser Unit and Air Handling Controls".
2. Refer to Section 011000 – Summary, paragraph 1.03 – Scope of Work, Add paragraph no. O: "Provide new air handling controls for two existing air handling units located in Mechanical Room below existing roof where new condenser unit will be installed. Furnish all labor and materials required for new controls to communicate between the buildings existing controls system as well as the existing campus wide temperature control system located off-site in the Teen Center. (Teen Center is located behind Benton Harbor High School). Contractor will furnish labor and materials to program all new equipment controls to existing equipment and building controls. New system must be able to communicate with existing building and campus wide temperature control systems. Contractor will deliver a complete working control system to Owner and include a minimum of two hours instruction time for Owner's Maintenance Staff to become familiar with operation of new system and condensing unit controls.
3. Add new Specifications Section: Section 230996 – Air Handling Unit Controls. The scope of work will involve new Trane Control Software and Hardware Controls to

communicate with the Owner's existing Tracer Summit System. No substitutions for other manufacturers will be accepted. Refer to specifications under Addendum No. 2.

DRAWINGS:

1. Refer to Sheet T1.1 – Title Sheet. Add two new sheets to Drawing Index, A1.4 – Fall Protection Plan and Sheet A1.5 – 2nd Floor Plan – identifying location of new wireless thermostats.
2. Refer to Sheet A1.1 – Roof Plan. Add notes as identified on new issued sheet AD2.1.
3. Refer to Sheet A1.2 – Curb Details. Add notes as identified on new issued sheet AD2.2.
4. Refer to Sheet A1.3 – Curb Details. Add notes as identified on new issued sheet AD2.3.
5. Add new Sheet AD2.4 – Fall Protection Plan. Furnish four steel anchoring posts attached to two steel angles field welded to existing steel bar joists in Mechanical Room below roof. Roofing Contractor to install new pitch pockets and EPDM flashings around new roof penetrations.
6. Add new Sheet AD2.5 – 2nd Floor Plan – Identifying locations of new wireless thermostats in six classrooms.

END OF ADDENDUM NO. 2

SECTION 00 4100

BID FORM

THE PROJECT AND THE PARTIES

TO:

Benton Harbor Area Schools
823 Riverview Drive
Benton Harbor, Michigan 49022

FOR:

New Condenser Unit for Benton Harbor High School

BID DUE DATE: January 14, 2009.

SUBMITTED BY: (Bidder to enter name and address)

Bidder's Full Name _____
Address _____
City, State, Zip_____

OFFER

Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by Abonmarche Consultants, Inc. for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:

Benton Harbor High School 50-ton Condenser Unit and Air Handling Controls:

_____
dollars ($_____), in lawful money of the United States of America.

Performance Assurance Bonds:
Bonding Company Name:_____
Bond Cost $:_____

We have included the required security deposit as required by the Instruction to Bidders.

The Bidder will be responsible for all required permits/inspections for state, county, and local building authorities.

All applicable federal taxes are included and State of Michigan sales taxes are included in the Bid Sum.

ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for sixty days from the bid closing date.

If this bid is accepted by Benton Harbor Area Schools within the time period stated above, we will:

Execute the Agreement within seven days of receipt of Notice of Award.
Furnish the required bonds within seven days of receipt of Notice of Award.
Commence work within seven days after written Notice to Proceed of this bid.

If this bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to Benton Harbor Area Schools by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.

In the event our bid is not accepted within the time stated above, the required security deposit

shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

CONTRACT TIME

If this Bid is accepted, we will:

Substantially Complete the Work by April 24, 2009.

Final Completion (Including Punch List Items) by May 8, 2009.

ADDENDA

The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.

Addendum # _____ Dated _____.
Addendum # _____ Dated _____.
Addendum # _____ Dated _____.
Addendum # _____ Dated _____.

BID FORM SUPPLEMENTS

The following Supplements are attached to this Bid Form and are considered an integral part of this Bid Form:

Document 004340 - Supplement J - Non-Collusion Affidavit. Fill-in all required information specifically requested on the Form.
Document 004341 - Supplemental K - Non-Asbestos Affidavit. Fill-in all required information requested on the Form.
Document 004430 - Supplemental A-1 Certification of Nonsegregated Facilities.
Document 004440 - Exhibit B - Board of Education Statement of Compliance.
Document 004442 - Exhibit A - Nondiscrimination Clause.
Document 004460 - Document AAP-1 - Affirmative Action Program.
Document 004470 - Document AOC-1 - Acknowledgement of Commitment.
Document 004480 - Supplement M - Contractor Personnel Lien Waiver Affidavit.
Document 004481 - Supplement N - Familial Relationship Disclosure Affidavit.

BID FORM SIGNATURE(S)

The Corporate Seal of

_____

(Bidder - print the full name of your firm)

was hereunto affixed in the presence of:

_____

(Authorized signing officer, Title)

(Seal)

_____

(Authorized signing officer, Title)

If the Bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.

END OF BID FORM

SECTION 23 0996

AIR HANDLING UNIT CONTROLS

PART 1 GENERAL

1.01 SUMMARY

A. The following sections outline the requirements for air handling unit controllers. The controllers referred to herein shall be fully programmable and capable of operating in a standalone mode.

1.02 SCOPE OF WORK

A. The controllers described herein shall be provided in their entirety by the BAS/ATC contractor. The BAS/ATC contractor shall provide all high voltage, low voltage (24 volts or less) wiring, terminations, and system programming.

B. Contractor will deliver a complete working control system to Owner and include a minimum of two hours instruction time for Owner's Maintenance Staff to become familiar with operation of new system and condensing unit.

1.03 SYSTEM DESCRIPTION

A. Custom application controllers shall be microprocessor based, consisting of analog and binary input and output points, and programmable logic, designed for monitoring and control applications. The controllers must operate as completely independent units and/or as part of a facility-wide building control system.

1.04 QUALITY ASSURANCE

A. Controllers shall be certified by a nationally recognized testing laboratory to company with the requirements of the UL-916 Energy Management Equipment standard. Controllers shall meet all requirements of FCC regulations, Part 15, Class A, for radio frequency emissions. Controller shall be in compliance with European Directive CE for electrical immunity (directive 89/336/EEC EN) and CE for electrical emissions, and include the CE Mark.

PART 2 PRODUCTS

2.01 Air Handling Unit Controllers

A. Air handling unit controllers shall be mounted in enclosures appropriate to the project environmental conditions.
   1. Controllers used in conditioned ambient shall be mounted in NEMA type-1 enclosures, and shall be rated for operation at 0 C to 50 C (32 F to 120 F).
   2. Controllers used outdoors and/or in wet ambient shall be mounted within NEMA type-4 waterproof enclosures, and shall be rated for operation at -40 C to 70 C (- 40 F to 158 F).
   3. Enclosures shall include a line voltage to 24 VAC transformer. Transformer shall be fused or circuit-breaker protected within the enclosure.
   4. Enclosures shall have multiple access locations for wire and conduit to enter the cabinet, and an isolated high voltage section. All control wiring shall be electrically terminated inside the cabinet. The controller in enclosure shall be UL-listed.
   5. The controllers shall be software configurable for the types of input/output points required per the points list, and for future expansion.
   6. The controllers shall receive signals from industry standard sensors and input devices and directly control analog and binary control devices. The controllers shall have the capability to monitor and control the following types of inputs and outputs:
      a. Analog Inputs
         1) Current: 0 to 20 mA
         2) Voltage: 0 to 10 Vdc
         3) Thermistor
         4) Linear resistance

5) Resistance temperature detectors (RTD)
6) Binary Inputs
   (a) Isolated dry contact closure
   (b) Pulse inputs for metering
7) Analog Outputs
   (a) Current: 0 to 20 mA
   (b) Voltage: 0 to 10 Vdc
8) Binary Outputs
   (a) 24 VAC, relay controlled. Each output shall include an indicator light providing on/off status of the associated binary output.

7. Each controller enclosure shall include a 18-24 Vdc power supply capable of supplying sufficient dc power for all transmitting (e.g. 4-20 mA) sensors connected as specified, and for all unused analog inputs.
8. Air handling unit controllers must communicate using LonTalk. Controllers shall use FTT-10 transceivers. All communications shall be with the use of LonMark-approved standard network variable types (SNVT).
9. The controller operating system and programming shall be stored in non-volatile memory.
10. Each controller shall monitor all analog inputs and control analog outputs, utilizing 12-bit analog-to-digital and digital-to-analog conversion.
11. Each controller shall be capable of executing proportional, integral, and derivative (PID) control loops and custom logic control routines.
12. PID loops shall be programmable to operate at user-defined intervals, as frequently as one second.
13. The custom application controllers shall include a communications data port for connection to a personal computer for upload, download, and editing of data and programs.
14. The controller shall provide the following diagnostic information via light or LED:
    a. Status (power) indication
    b. LonTalk communications status
    c. Indication of the loss of controller function, or network problems
    d. AIR HANDLING UNIT CONTROLLER PROGRAMMING TOOL
15. BAS/ATC contractor shall provide a software programming tool to be used for set-up, programming, and editing of the controller functions.
16. Edit Software shall run on a laptop computer with the following requirements:
    a. Microsoft Windows 98, or 2000 Professional operating system
    b. CD-ROM drive for program installation
    c. 64 MB RAM
    d. 20 MB hard drive space
    e. 800 x 600 screen resolution
    f. PCMCIA slot for a network interface card
17. Edit software shall incorporate graphical function and logic blocks linked pictorially to create custom application programs meeting the sequence(s) of operation.
18. Edit software shall include PID control loop setup functions.
19. Edit software shall facilitate controller database save and restore functions.
20. Edit software shall have a print function to provide pictorial printed representations of the graphical programs.
21. The service tool using the edit software, and connected to one local controller shall have full access to all local controllers on the same communications link.

PART 3 EXECUTION

3.01 Provide and install DDC air handling unit controls for two air handling units including:

A. LONTALK compatible control panel must communicate with existing Tracer Summit building management panel for time of day scheduling, setpoint adjustment, monitoring and alarming. Panel shall reside on existing communication link in building.

B. Belimo OA / RA / RLF damper actuators

C. Belimo zone damper actuators for each zone

D. Mixed air temperature sensor

E. 3-way heating coil control valve w/ Belimo actuator

F. Relays for DX compressor staging of new condensing unit

G. Freezestat

H. Relay for supply fan start/stop

I. Relay for return fan start/stop

J. Current switch for supply fan status

K. Current switch for return fan status

L. Discharge air temperature sensor

M. Outside air temperature sensor

N. Smoke detector

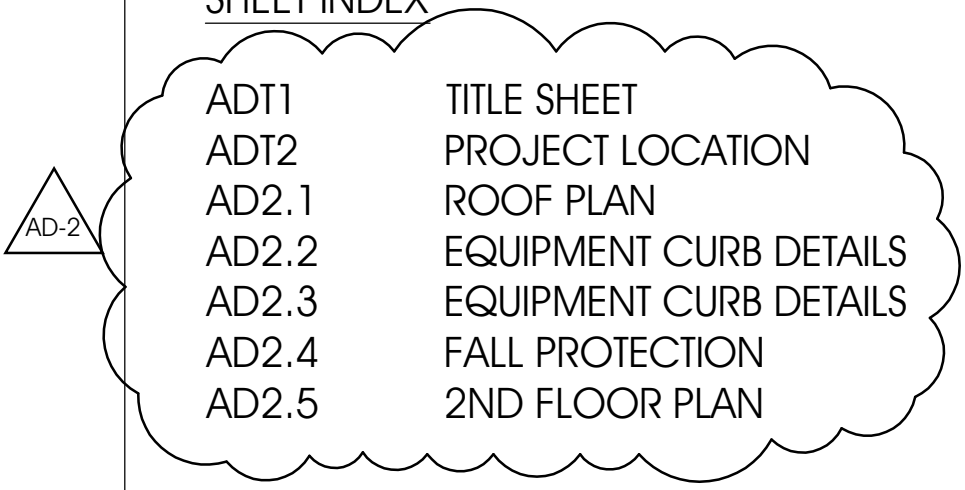
O. Wireless space temperature sensor w/ thumbwheel adjustment for each zone
   1. Air handling unit control panel will reside on same communication link as existing equipment in building. Panel shall be capable of accepting time-of-day occupied/unoccupied scheduling, setpoint adjustments, point monitoring and alarm generation from the Building Control Unit panel through the LONTALK communication link. Temperature control contractor is responsible for mounting air handler control panel and associated end devices, power wiring to air handler control panel, low voltage wiring between air handler control panel and end devices and LONTALK communication link wiring.
   2. Air handling unit control panel shall be interfaced to the existing campus wide temperature control system. Graphics for each air handling unit and building floor plans shall be created for installation on the existing operator workstations and existing web server panel.

END OF SECTION

NEW CONDENSING UNIT
BENTON HARBOR HIGH SCHOOL
BENTON HARBOR, MICHIGAN

BENTON HARBOR AREA SCHOOLS
823 RIVERVIEW DRIVE
BENTON HARBOR, MICHIGAN 49022

SHEET INDEX



APPLICABLE CODES

BUILDING CODE:	MICHIGAN BUILDING CODE 2006
MECHANICAL CODE:	MICHIGAN MECHANICAL CODE 2006
ELECTRICAL CODE:	NATIONAL ELECTRICAL CODE 2005

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ACI JOB # M8-0842
DATE: 01-06-09
DRAWN BY: JOHNSON

TITLE SHEET - NEW CONDENSING UNIT
BENTON HARBOR HIGH SCHOOL
BENTON HARBOR AREA SCHOOLS
BENTON HARBOR, MICHIGAN

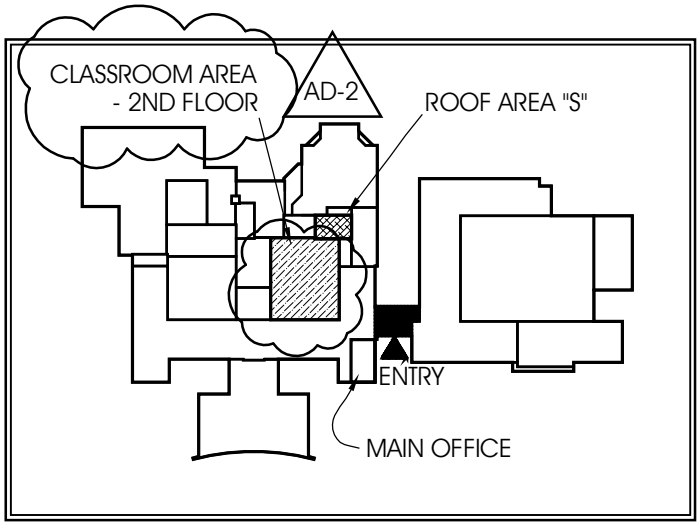
SHEET No. **ADT1**

NOTES

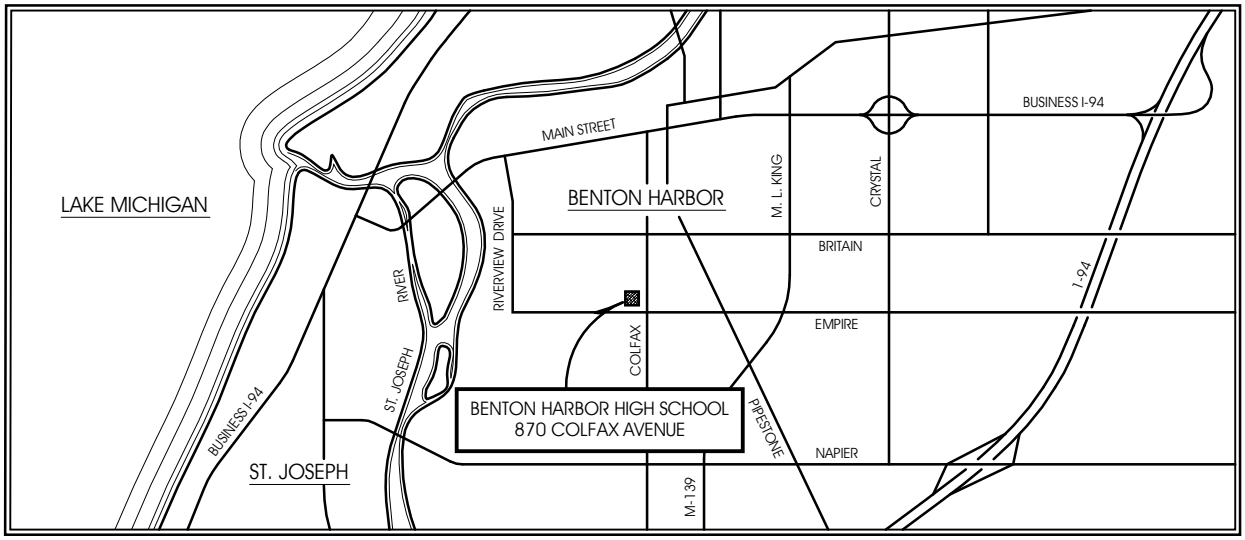
SHOULD A CONTRACTOR FIND DISCREPANCIES OR AMBIGUITIES IN, OR OMISSIONS FROM, THE DRAWINGS OR SPECIFICATIONS, OR BE IN DOUBT ABOUT THEIR MEANING, HE SHALL NOTIFY THE ARCHITECT IMMEDIATELY.

CONTRACTORS SHALL VERIFY AND CHECK ALL DIMENSIONS ON THE JOB, DURING CONSTRUCTION AND ADVISE THE ARCHITECT OF ANY DISCREPANCIES.

DO NOT SCALE DRAWINGS. USE INDICATED DIMENSIONS ONLY.



BENTON HARBOR
HIGH SCHOOL
NOT TO SCALE



SITE LOCATION MAP
NOT TO SCALE

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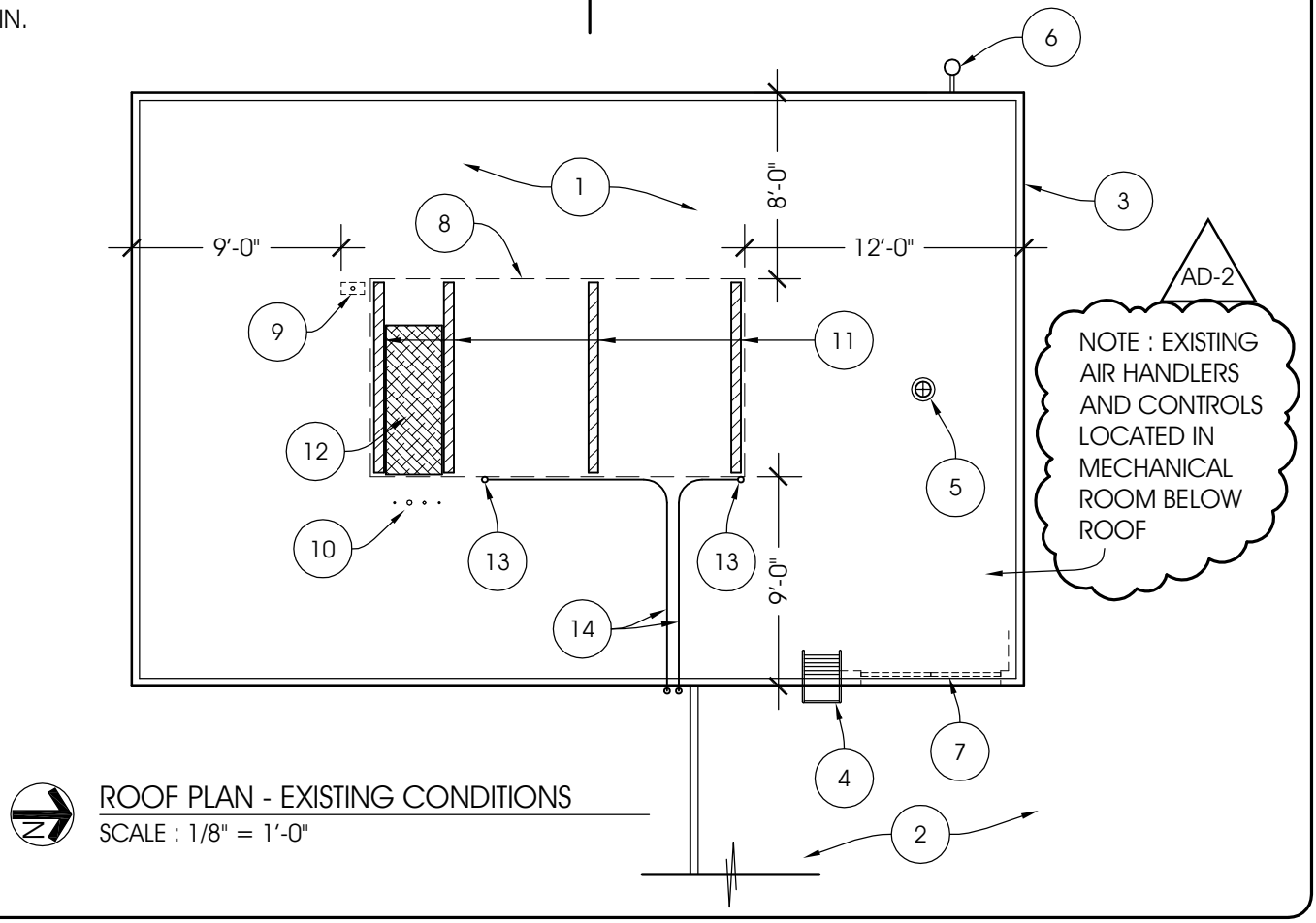
JOHNSON

PROJECT LOCATION - NEW CONDENSING UNIT
BENTON HARBOR HIGH SCHOOL
BENTON HARBOR AREA SCHOOLS
BENTON HARBOR, MICHIGAN

SHEET No.
ADT2

ROOF PLAN KEYNOTES

1. EXISTING ROOF AREA "S" (OUT OF WARRANTY FULLY ADHERED E.P.D.M. MEMBRANE ROOFING).
2. EXISTING LOWER ROOF "T".
3. EXISTING 4" WIDE x 4" HIGH ROOF CURB (TYP).
4. EXISTING ACCESS LADDER FROM ROOF "T" TO ROOF "S" - TO REMAIN.
5. EXISTING ROOF DRAIN TO REMAIN.
6. EXISTING SECURITY CAMERA TO REMAIN.
7. EXISTING ACCESS TO MECHANICAL ROOM BELOW ROOF "S" - PAIR OF DOORS AT LOWER ROOF.
8. OUTLINE OF EXISTING 50-TON CONDENSING UNIT TO BE DISCONNECTED AND REMOVED - SERVES A.H.U. No. 1 IN MECHANICAL ROOM BELOW ROOF "S", TO (6) INTERNAL CLASSROOMS.
9. EXISTING ELECTRICAL DISCONNECT PANEL TO REMAIN.
10. EXISTING (4) PIPE PENETRATIONS FOR COOLANT LINES BETWEEN CONDENSING UNIT ON ROOF AND A.H.U. BELOW, - TO REMAIN.
11. EXISTING FLASHED STEEL EQUIPMENT CURBS TO REMAIN - SEE REVISED CURB DETAILS ON SHEET A1.2.
12. INSPECT EXISTING ROOFING IN THIS AREA WHEN EXISTING CONDENSER IS REMOVED. EXISTING ROOFING MEMBRANE IS LAID ON SURFACE, AND IS NOT ATTACHED VIA ADHESIVE OR MECHANICAL MEANS, - RE-ATTACH AS REQUIRED.
13. EXISTING AERIALS FASTENED TO EXISTING CONDENSER - TO BE TEMPORARILY REMOVED AND REINSTALLED ON NEW CONDENSING UNIT.
14. EXISTING AERIAL CABLES TO REMAIN, - REVISE LENGTHS AS NECESSARY TO ACCOMMODATE NEW LOCATIONS OF AERIALS. VERIFY THAT ALL SYSTEMS ARE FUNCTIONING PROPERLY UPON COMPLETION OF WORK.



ROOF PLAN - EXISTING CONDITIONS
SCALE : 1/8" = 1'-0"

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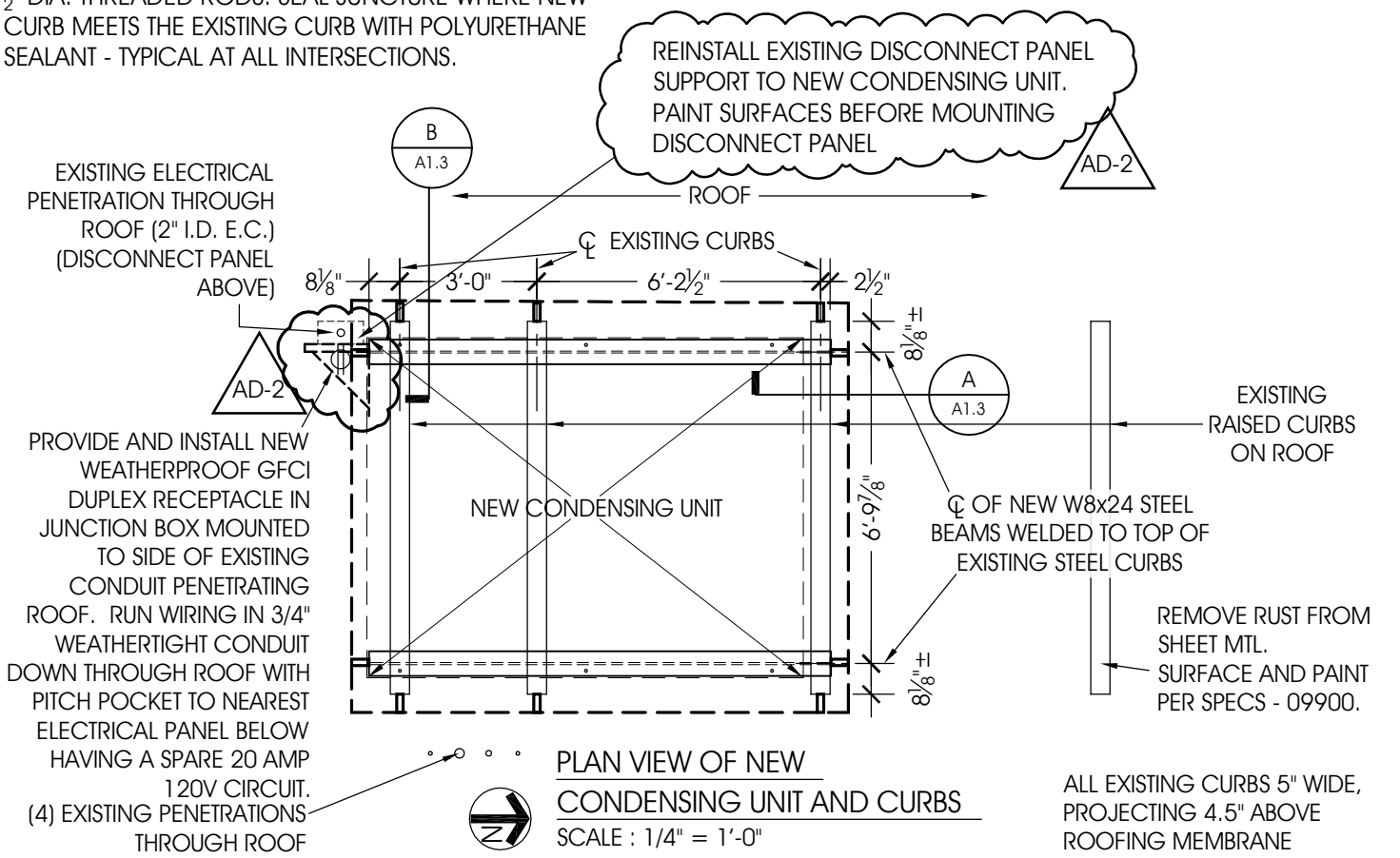
ROOF PLAN - NEW CONDENSING UNIT
BENTON HARBOR HIGH SCHOOL
BENTON HARBOR AREA SCHOOLS
BENTON HARBOR, MICHIGAN

SHEET No. **AD2.1**

NOTE: EXISTING FLASHING OVER EQUIPMENT CURBS TO REMAIN. INSTALL A 45 MIL EPDM SEPARATOR SHEET BETWEEN THE FLASHING AND BOTTOM OF NEW EQUIPMENT CURB STEEL. ATTACH NEW CURB STEEL WITH $\frac{1}{2}$" DIA. THREADED RODS. SEAL JUNCTURE WHERE NEW CURB MEETS THE EXISTING CURB WITH POLYURETHANE SEALANT - TYPICAL AT ALL INTERSECTIONS.

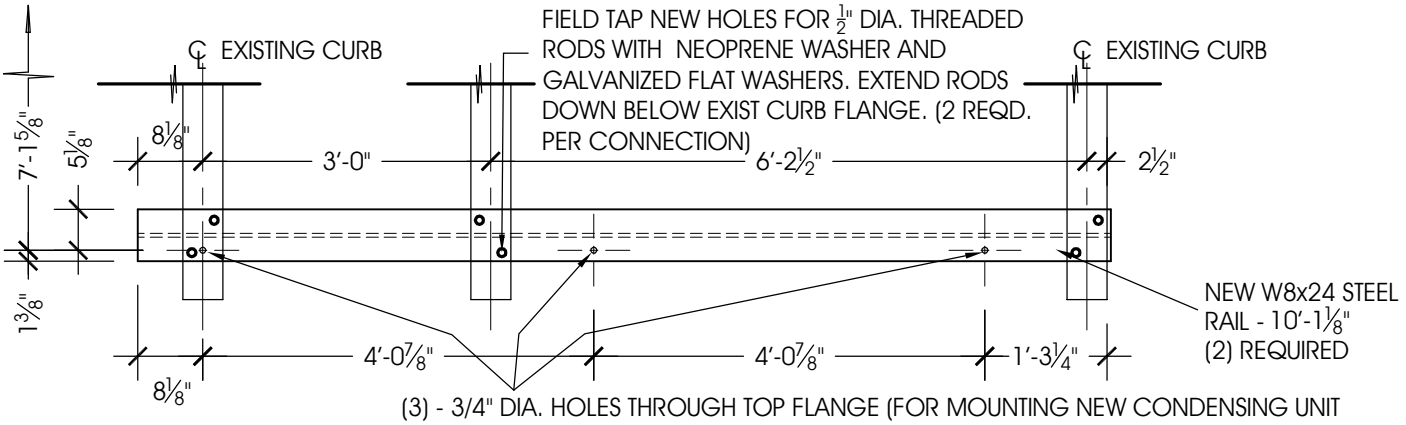
ROOFING CONTRACTOR TO CUT IN A NEW 4" SQ. X 4" HIGH PITCH POCKET INTO EXIST. ROOF FIELD MEMBRANE. FLASH IN NEW EPDM FLASHING PER NRCA STANDARDS. FILL POCKET WITH CONCRETE BASE AND PITCH MATERIAL, THEN CAP WITH SELF-LEVEL URETHANE SEALANT.



PLAN VIEW OF NEW CONDENSING UNIT AND CURBS

SCALE : 1/4" = 1'-0"

ALL EXISTING CURBS 5" WIDE, PROJECTING 4.5" ABOVE ROOFING MEMBRANE



PLAN VIEW OF NEW EAST W8x24 STEEL BEAM WELDED TO TOP OF EXISTING STEEL CURBS

SCALE : 1/2" = 1'-0"

(NEW WEST BEAM OPPOSITE HAND)

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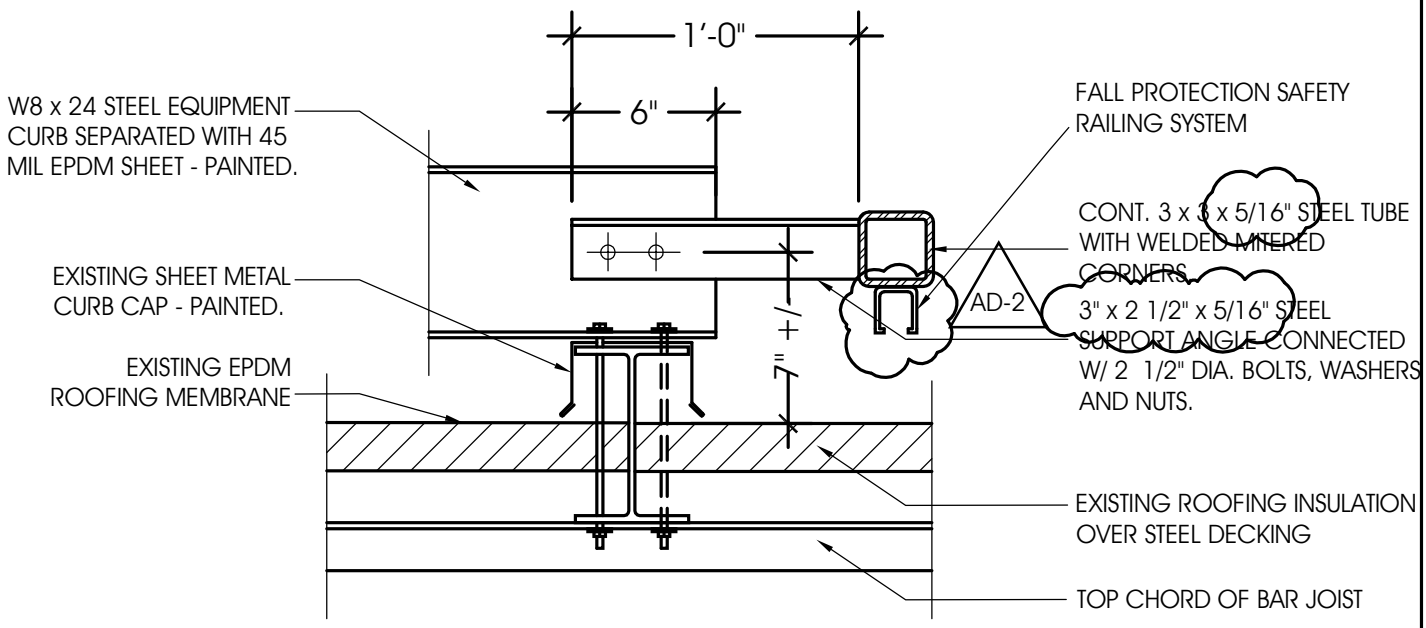
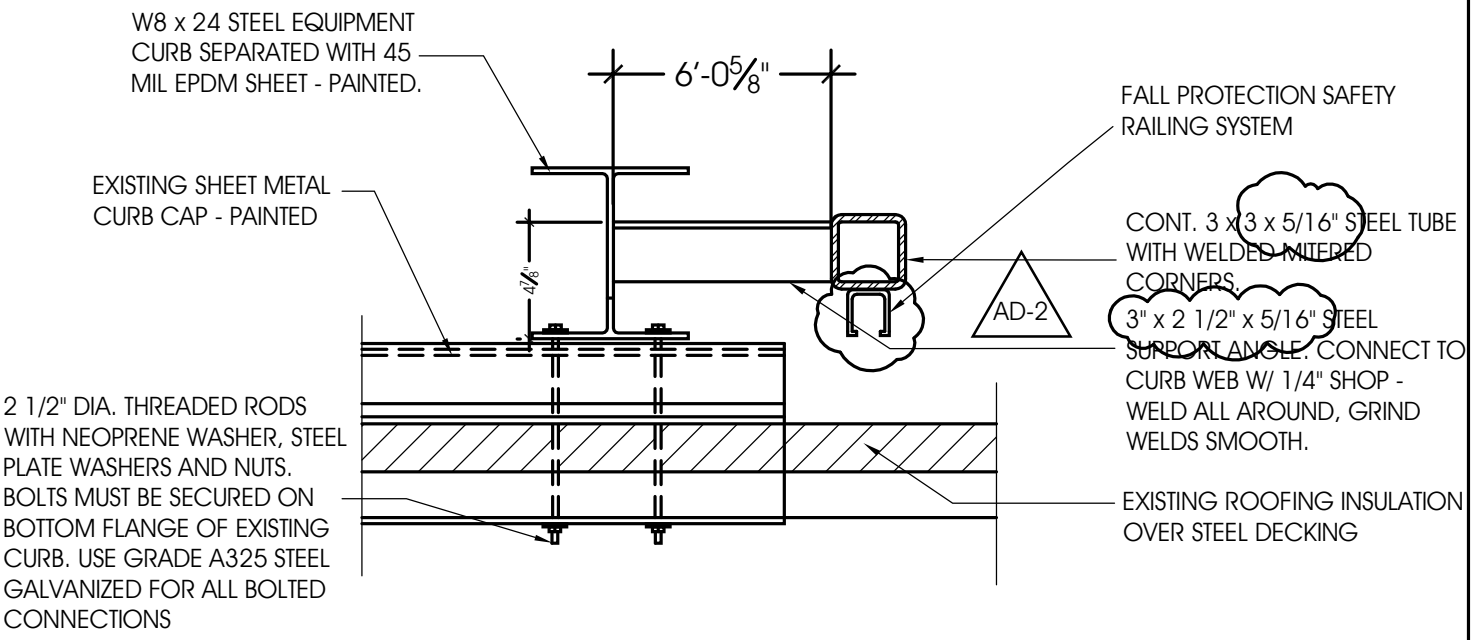
CURB DETAILS - NEW CONDENSING UNIT
BENTON HARBOR HIGH SCHOOL
BENTON HARBOR AREA SCHOOLS
BENTON HARBOR, MICHIGAN

SHEET No. AD2.2



CONDENSING UNIT CURB - DETAIL "A"

SCALE : 1-1/2" = 1'-0"



CONDENSING UNIT CURB - DETAIL "B"

SCALE : 1-1/2" = 1'-0"

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CURB DETAILS - NEW CONDENSING UNIT
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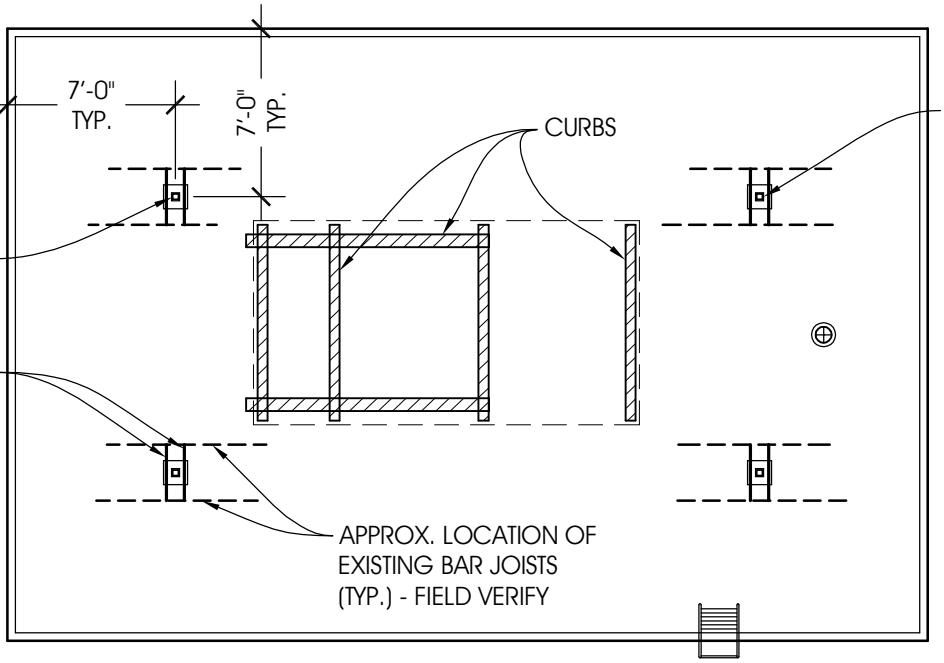
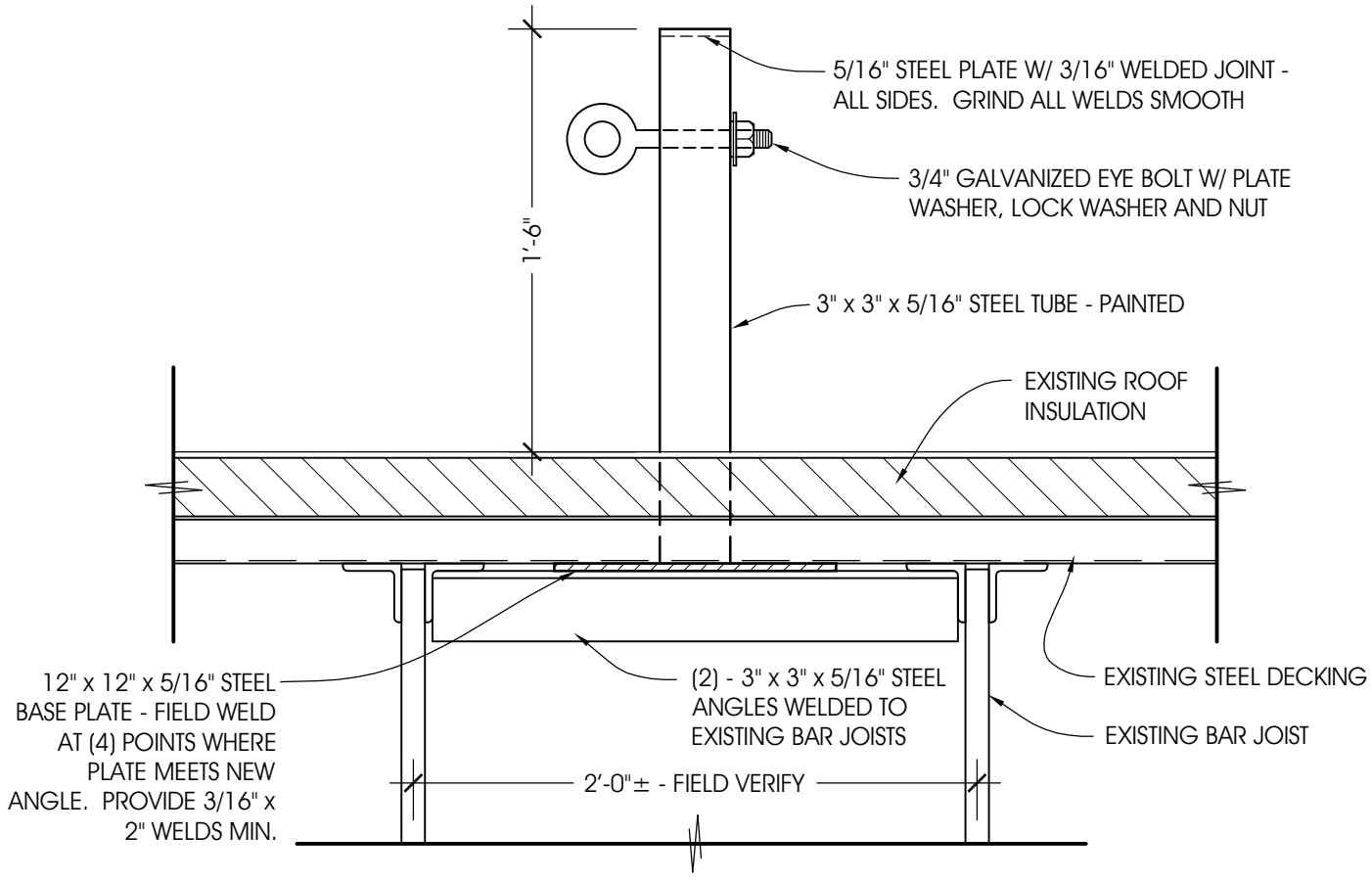
BENTON HARBOR, MICHIGAN

SHEET No.
AD2.3



FALL PROTECTION ANCHOR POINT PLAN

SCALE : 1/8" = 1'-0"



FALL PROTECTION TUBE ANCHOR POINT DETAIL

SCALE : 1-1/2" = 1'-0"

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FALL PROTECTION - NEW CONDENSING UNIT
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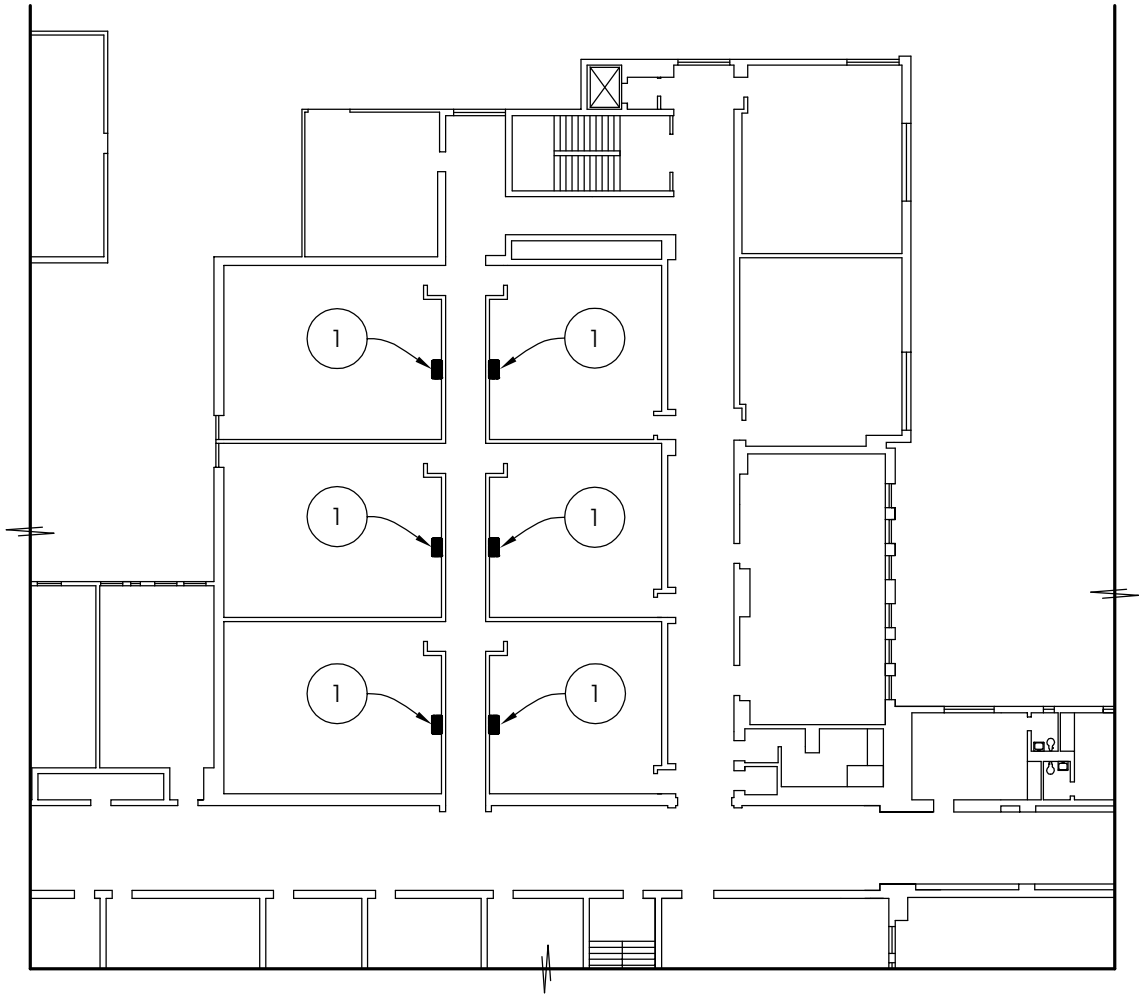
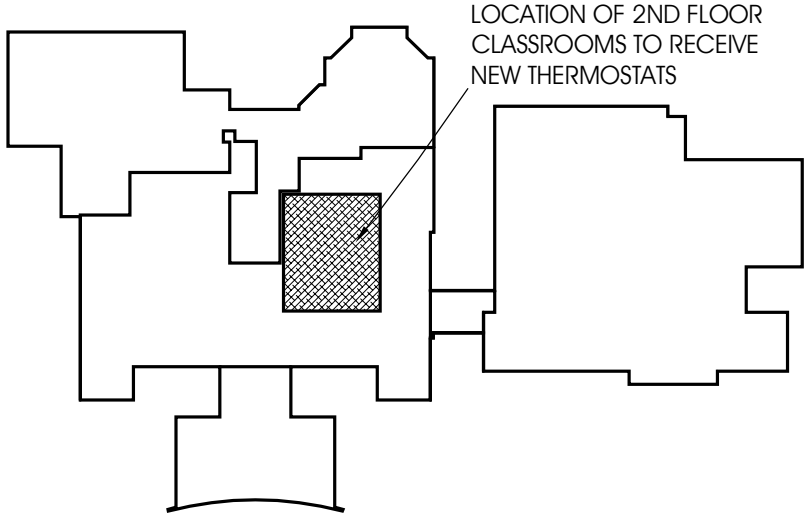
SHEET No. **AD2.4**



PARTIAL EXISTING 2ND FLOOR PLAN
ROOM THERMOSTAT LOCATIONS
SCALE : 1/32" = 1'-0"

2ND FLOOR PLAN KEYNOTES

1. FIELD LOCATE (6) NEW WIRELESS THERMOSTATS IN CLASSROOMS AS SHOWN.



BENTON HARBOR HIGH SCHOOL
NO SCALE

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2ND FLOOR PLAN - NEW CONDENSING UNIT
BENTON HARBOR HIGH SCHOOL
BENTON HARBOR AREA SCHOOLS
BENTON HARBOR, MICHIGAN

SHEET No.
AD2.5